

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

REC'D 29 MAR 2005


WIPO

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Applicant's or agent's file reference 2003PCT27	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/KR2003/002280	International filing date (day/month/year) 27 OCTOBER 2003 (27.10.2003)	Priority date (day/month/year) 29 OCTOBER 2002 (29.10.2002)
International Patent Classification (IPC) or national classification and IPC IPC7 A61K 31/4375, A61P 25/30		
Applicant SUNGKYUNKWAN UNIVERSITY et al		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of 3 sheets, including this cover sheet.
- ☒ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).
- These annexes consist of a total of 1 sheets.

3. This report contains indications relating to the following items:
- I ☒ Basis of the report
 - II ☐ Priority
 - III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
 - IV ☐ Lack of unity of invention
 - V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
 - VI ☐ Certain documents cited
 - VII ☐ Certain defects in the international application
 - VIII ☐ Certain observations on the international application

Date of submission of the demand 17 MAY 2004 (17.05.2004)	Date of completion of this report 18 FEBRUARY 2005 (18.02.2005)
Name and mailing address of the IPEA/KR  Korean Intellectual Property Office 920 Dunsan-dong, Seo-gu, Daejeon 302-701, Republic of Korea Facsimile No. 82-42-472-7140	Authorized officer LEE, HYUN SONG Telephone No. 82-42-481-5606

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/KR2003/002280

I. Basis of the report

1. With regard to the elements of the international application:*

- ☐ the international application as originally filed
- ☒ the description:
 pages 1-12, as originally filed
 pages _____, filed with the demand
 pages _____, filed with the letter of _____
- ☒ the claims:
 pages _____, as originally filed
 pages _____, as amended (together with any statement) under Article 19
 pages _____, filed with the demand
 pages 13, filed with the letter of 24 September, 2004
- ☒ the drawings:
 pages 1-4, as originally filed
 pages _____, filed with the demand
 pages _____, filed with the letter of _____
- ☐ the sequence listing part of the description:
 pages _____, as originally filed
 pages _____, filed with the demand
 pages _____, filed with the letter of _____

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

- These elements were available or furnished to this Authority in the following language. English which is
- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☒ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets _____

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this opinion as "originally filed." and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).

** Any replacement sheet containing such amendments must be referred to under item I and annexed to this report.

INTERNATIONAL PRELIMINARY EXAMINATION

International application No.

PCT/KR2003/002280

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**1. Statement**

Novelty (N)	Claims	1-4	YES
	Claims		NO
Inventive step (IS)	Claims	3, 4	YES
	Claims	1, 2	NO
Industrial applicability (IA)	Claims	1-4	YES
	Claims		NO

2. Citations and explanations (Rule 70.7)

D1: A. BRISSEMORET, 'Note Sur Les Plantes Anti-Opium', Comptes Rendus des Seances de la Societe de Biologie et de Ses Filiales, 1925, Vol. 93, 1341-1343.

D2: GE XIAOQUN, ZHANG HONGQUAN, ZHOU HAUZHU, XU ZHENGXIN, BIAN CHUNFU, 'Experimental Study of Tetrahydroprotoberberines Inhibiting Morphine Withdrawal Syndromes', Chin. J. Drug Depend. (Zhongguo Yaowu Yilaixing Zazhi), 1999, Vol. 8, No. 3, 182-184, 198.

Claims 1 and 2 of the present invention relate to pharmaceutical compositions for inhibiting psychological dependence on morphine, comprising berberine with an inhibitory effect versus increase of psychological dependence and spontaneous locomotor activity. Claims 3 and 4 relate to a pharmaceutical composition for preventing or inhibiting development of tolerance to analgesic effects of morphine, comprising berberine as an effective ingredient.

D1 describes that berberine is effective for treatment of the morphine addiction or the heroinmaniac. In D2, the effect of tetrahydroprotoberberines on the withdrawal syndromes in morphine-dependent mice and rats is studied.

Claims 1 and 2 concern only psychological dependence on morphine. D1 describes treatment of morphine addiction or the heroinmaniac, which are caused by combination of physical and psychological dependences. Therefore, applying the berberine to someone having only psychological dependence has no technical difficulty and unexpected effect. Thus, the inventiveness of claims 1 and 2 cannot be acknowledged (Article 33(3) PCT).

D1 and D2 do not directly mention the inhibition of development of tolerance to analgesic effects of morphine, thus, claims 3 and 4 are novel and inventive (Article 33(2) and (3) PCT).

The present invention directed to a pharmaceutical composition containing berberine is industrially applicable under PCT Article 33(4).

CLAIMS

1. A pharmaceutical composition for inhibiting psychological dependence on morphine, comprising berberine with an inhibitory effect versus increase of psychological dependence and spontaneous locomotor activity.

5 2. The pharmaceutical composition as set forth in claim 1, wherein the composition comprises the berberine as an effective ingredient and further comprises a pharmaceutically acceptable carrier.

10 3. A pharmaceutical composition for preventing or inhibiting development of tolerance to analgesic effects of morphine, comprising berberine as an effective ingredient.

 4. The pharmaceutical composition as set forth in claim 3, further comprising a pharmaceutically acceptable carrier.